UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/577,032 | 05/23/2000 | Kunihiro Tashiro | 1324.64102 | 3410 |

7590 07/14/2005

Patrick G. Burns, Esq.
Greer, Burns & Crain, Ltd.
300 S. Wacker Drive
Suite 2500
Chicago, IL 60606

| EXAMINER | |
|---|---|
| DUONG, THOI V | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2871 | |

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/577,032 | TASHIRO ET AL. | |
| | Examiner | Art Unit | |
| | Thoi V. Duong | 2871 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2,4-9 and 17-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,2 and 4-8* is/are allowed.

6)☒ Claim(s) *9 and 17-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 05, 2005 has been entered.

Accordingly, claim 19 was amended and claims 3, 10-16 and 21-56 were cancelled. Currently, claims 1, 2, 4-9 and 17-20 are pending in this application.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claim 9 rejected under 35 U.S.C. 102(e) as being anticipated by von Gutfeld et al. (USPN 6,179,679 B1).

As shown in Fig. 4, von Gutfeld et al. discloses a liquid crystal display comprising:

a sealing material 101 made of a photo-curing material sealing liquid crystal sandwiched between two substrates 103 and 104 (col. 1, lines 36-44) and having a portion overlapping with a shading film 105 and an opening portion (between shading film) viewed from a direction vertical to the substrate (col. 4, lines 24-29); and

a light-reflection layer 401 having a concave-convex structure which has inclined surfaces and formed only in an area to be under the sealing material on the substrate 104 (col. 4, lines 27-35).

4. Claims 17, 18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishiguchi et al. (Nishiguchi, USPN 6,226,067 B1).

Re claim 17, as shown in Figs. 8-10, Nishiguchi discloses a liquid crystal display (LCD) comprising:

two substrates 1a and 1b attached opposing each other;

a sealing material 7 formed outside a display area having a plurality of pixels for sealing liquid crystal between two substrates (col. 8, lines 22-25); and

a plurality of structures 3 formed inside the display area of the substrate 1 to which liquid crystal 5 is dropped for controlling spreading speed of dropped liquid crystal (see also Fig. 21b, and col. 8, lines 33-37),

wherein, re claim 18, the plurality of the structures 3 are distributed on the substrate at a predetermined arrangement density or a predetermined arrangement shape (Figs. 8 and 9).

Re claim 20, as shown in Fig. 2b, Nishiguchi discloses a liquid crystal display comprising:

two substrates 1a and 1b attached opposing each other; and

a sealing material 7 formed outside a display area having a plurality of pixels for sealing liquid crystal 5 between the two substrates.

As shown in Fig. 30, Nishiguchi also discloses that the sealing material 7 (wall-like structure) may have a multilayer structure of three layers (inner layer, middle layer and outer layer) (col. 16, lines 14-16). It is inherent that a hollow frame-shape sealing material is formed by the middle layer and the outer layer of the sealing material 7 at an external periphery of the inner layer of the sealing material 7 for functioning as suction in an atmosphere since this multiplayer structure improves the air-tightness seal of the display to prevent the intrusion of moisture and impurities from outside the display (col. 16, lines 16-23).

5. Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by von Gutfeld (USPN 6,219,126 B1).

As shown in Figs. 1 and 4, von Gutfeld discloses a liquid crystal display comprising:

two substrates 1a, 1b attached opposing each other;

a sealing material 2 formed outside a display area (containing liquid crystal 4) having a plurality of pixels for sealing liquid crystal 4 between the two substrates,

a convex shape structure 3a for defining a cell gap, provided in a frame shape between the sealing material 2 and the display area comprising liquid crystal 4, at least on one of the two substrates (col. 1, line 63 through col. 4, line 2); and

a gap portion formed between the sealing material 2 and the convex shape structure 3a for draining excess liquid crystal (spillover 6) overflowing from the display area (col. 4, line 64 through col. 5, line 5).

6. Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Hirakata et al. (Hirakata, USPN 6,465,268 B2).

As shown in Fig. 26, Hirakata discloses a liquid crystal display comprising:

two substrates attached opposing each other (col. 25, line 66 through col. 26, line 2);

a sealing material 730 (gap retaining member) formed outside a display area 202 having a plurality of pixels for sealing liquid crystal between the two substrates (col. 6, lines 4-8 and col. 26, lines 11-13); and

a hollow frame-shape sealing material 731, 732 (gap retaining members formed around the driver-circuit-confronting areas 203 and 204) at an external periphery of the sealing material 730 (col. 26, lines 20-25).

Since Hirakata discloses a liquid crystal display having the same structure as the claimed invention, the hollow frame-shape sealing material 731, 732 of Hirakata inherently functions as a suction in an atmosphere.

***Allowable Subject Matter***

7. Claims 1, 2 and 4-8 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claim 1, none of the prior art of record discloses, in combination with other limitations as claimed, a blue-colored layer, a red-color layer and a green-color layer formed at an area of a shading film, wherein only the blue-colored layer is in contact with the sealing material.

The most relevant reference, USPN 5,910,829 to Shimada et al. (Shimada), fails to disclose or suggest that only the blue-colored layer is in contact with the sealing material. In Fig. 14, Shimada shows a blue-colored layer B being in contact with the sealing material 133; however, there are only one blue-colored layer formed at an area of the shading film 134. In Figs. 15 and 16, Shimada et al. shows a blue-colored layer B, a red-color layer R and a green-color layer G formed at an area of the shading film 134a; however, the blue-colored layer B and the red-color layer R are in contact with the sealing material 133.

Re claim 4, none of the prior art of record discloses, in combination with other limitations as claimed, a light incident hole opened at a shading film above a transfer.

The most relevant reference, JP 09-090383 to Hasegawa et al. (JP'383), fails to disclose a light incident hole opened at the shading film above the transfer. As shown in Figs. 5 and 8, the JP'383 only discloses a light transmitting part (hole filled with transparent material) 53 formed at the shading film 43b.

Re claim 5, none of the prior art of record discloses, in combination with other limitations as claimed, an external peripheral end of the frame-shape structure and an external peripheral end of the black matrix picture-frame being formed to coincide with each other when viewing from a perpendicular direction to the substrates.

The most reference, USPN 5,621,553 to Nishiguchi et al. (Nishiguchi), fails to suggest the claimed invention. As shown in Fig. 1, Nishiguchi only discloses an external peripheral end of the frame-shape structure 7 and an internal peripheral end 8 of the black matrix picture-frame 8 being formed to coincide with each other when viewing from a perpendicular direction to the substrates.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

8. Applicant's arguments filed April 04, 2005 have been fully considered but they are not persuasive.

Re claim 20, Applicant argued that Nishiguchi fails to discloses any ability of its multilayer structure to function as a suction in an atmosphere and Nishiguchi teaches away from the invention by providing openings which destroy any ability of the structure to provide a suction.

The Examiner disagrees with Applicant's remarks.

At first, Nishiguchi discloses the multilayer structure of three layers of Nishiguchi, which is similar structure recited in claim 20, having adhesion property and high air-tightness seal (col. 15, line 46 through col. 16, line23); accordingly, it is inherent that the multilayer structure of three layers of Nishiguchi functions as a suction in atmosphere.

Next, Nishiguchi discloses that the opening of the structure may be provided as necessary and may be sealed after the liquid crystal material is loaded; accordingly, the opening is optional and the opening is not permanently existed in the structure to destroy any ability of the structure to provide a suction. Therefore, Nishiguchi does not teach away from the invention.

Re claim 9, Applicant argued that von Gutfeld et al. teaches the opposite of the concave-convex structure with inclined surfaces of the present invention. The Examiner disagrees since Fig. 4 of Von Gutfeld et al. clearly shows that the light reflection layer 401 has a concave-convex structure which has inclined surface and formed only in the area under the sealing material 101.

Re claims 17-19, Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection as shown above.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong

07/12/2005

DUNG T. NGUYEN
PRIMARY EXAMINER